increased oxidative stress. Expression of *p*53 and COX-2 showed transient elevation during the initial period of working but gradually declined as a result of acclimatization to benzene and other solvents. The levels of detoxifying agents like glutathione, superoxide dismutase, glutathione peroxidase were found to be decreased. It was also noticed that the levels of IgGs and immune cells like $CD4^+$ were decreased.
Conclusion: The study shows that benzene and its metabolites significantly increased oxidative stress and immune parameters in petrol filling workers thereby making them more susceptible to diseases compared to the others with minimal exposure.

Free Paper Presentation 5 – HIV/AIDS and Viral Infection

OL-037 Impact of malnutrition in survival of HIV-infected children after initiation of antiretroviral treatment (ART)

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Background: Malnutrition is a common condition in HIV-infected children; however, its impact in survival of HIV infected children after initiation of antiretroviral therapy is not well understood.
Objective: To assess the impact of malnutrition in survival of HIV infected children after initiation of antiretroviral treatment.
Methods: A retrospective cohort study was conducted in HIV infected children starting antiretroviral treatment at Zewditu memorial hospital, Addis Ababa, Ethiopia. Demographic, nutritional, clinical and immunological data were carefully extracted from the existing ART logbook and patient follow up cards. Nutritional status were defined with stunting (height for age Z score < –2), Wasting (weight for height Z score –2) and under weight (weight for age Z score < –2). Survival was defined as the time from nutritional and immunologic evaluation to death. Data were analyzed for uinvariate and multivariate analysis using Cox regression proportional hazard model. Survival rate was calculated and compare with the Kaplan Meier and log rank tests.
Results: A total of 475 HIV infected children starting antiretroviral treatment (ART) from March 21 2005 to 30 April 2008 were included in the study. Of whom 42 (8.8%) died during a median study follow up of 12 months. Independent baseline predictors of mortality were severe wasting (Hazard ratio (HR) = 4.99, 95% CI 2.4–10.2, P < 0.00), absolute CD4 below the threshold for severe immunodeficiency (HR = 3.02, 95% CI 1.02–8.96, P = 0.04) and low hemoglobin value (HR = 2.92, 95% CI 1.3–6.7, P = 0.001 for those hemoglobin value <7.0gm/dl).
Conclusion: Despite the apparent benefit of ART use on HIV related survival, severe wasting (WHZ < –3) appear to be strong independent predictor of survival in HIV infected children receiving ART.

OL-038 Preparation of a human full-IgG antibody against CCR5 coreceptor

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CCR5 was identified as a key coreceptor for HIV-1 entry. A deletion of 32 base pairs was found in the CCR5 gene open reading frame in a few persons who were at high risk for HIV entry but who had remained free of infection. Thus, inhibition of CCR5 protects against acquisition of HIV infection. However, all previously reported anti-CCR5 gene antibodies were not humanized and not suitable for human application. In this study, One of our selected single chain antibodies (scFvs) to CCR5, termed A8, was mapped to the residues 9–13 of hCCR5 N-terminal (Nt) by using CCR5 mutagenesis and flow cytometric analysis. A8 binding on CCR5 did not affect chemokiine-CCR5 activities and effectively blocked HIV-1 entry in vitro. A8 was then successfully converted into human IgG by cloned into an expressing vector TCAE 6. The role of human A8 IgG for inhibition of HIV entry was further characterized. The result revealed that A8 function of HIV-1 entry inhibition might be mediated by the blockage of a unique and a great conformational-dependent epitope of CCR5 Nt. The recognition of the epitope rendered A8 a higher affinity binding on a great proportion of cell surface CCR5 molecules when compared that of previously reported antibodies. Our study showed that human A8 IgG is functional antibody against CCR5 and is a great potential candidate for antibody therapy of human HIV infection in vivo.
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OL-039 The theory study of "All-round responsibilities system" for the control emergency public health disasters

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Background: A new method, called "All-round responsibilities system" was firstly introduced into the control of "hand-foot-mouth" disease in 2008, but a lot of unsolved issues were found.
Objectives: This article presented firstly the detail methodology of the "All round responsibilities system".
Methods: By use the literature analysis, field investigation and experts deeping talking methods, extensive issues were analyzed, and key issues of the methodology was described.
Results: "All round responsibilities system" was original from England more than 100 years ago, It was firstly used in control of emergency public health disaster in 2008. The key issues of the methodology were guarantee system which included financial, human sources, and ascertain where the responsibility lies.
Conclusions: The definition of the "All round responsibilities system" was given, and technological contents of the methodology were performed, and it could be used well for the future controlling of emergency public health disaster.

OL-040 Sarcoidosis in an HIV-positive patient presenting as a mediastinal mass

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Introduction: The immunological basis of sarcoidosis involves CD4 T lymphocytes for granuloma formation. Lack of CD4 cells with HIV infection has meant the association of HIV and sarcoidosis has rarely been described. Establishment of highly active anti-retroviral therapy causing immune restoration however, can result in concomitant sarcoidosis and HIV infection.

Case description: A 39-year-old Ugandan man was diagnosed HIV-1 positive in 1996 (baseline CD4 count 130/uL, viral load (VL) 235,678 copies/ml), and was commenced on Zidovudine, Lamivudine and Nevirapine therapy.
Ten years later the patient presented with sharp, right-sided chest pain. He did not describe any symptoms suggesting infection, nor relating to eyes, skin or joints.
Auscultation of the chest was unremarkable. He had tenderness on palpation over the right anterior chest wall. Chest radiograph revealed bilateral hilar lymphadenopathy (BHL). Blood tests showed CD4 count 385 with an undetectable viral load. Full blood count, renal, liver and bone profile were unremarkable. Serum angiotensin-converting enzyme was raised at 119 U/ml (normal range <67 U/ml).
Computed tomography of the chest confirmed extensive mediastinal lymphadenopathy, with bilateral hilar, pretracheal, right para-tracheal, pre-aortic and subcarinal nodes involved.
The differential diagnoses included tuberculosis and lymphoma. The patient underwent left anterior mediastinoscopy and mediastinal lymph node biopsy.
Microbiology cultures of the biopsy were negative and no acid-fast bacilli were seen. Histopathology showed the normal lymph node architecture was effaced by confluent non-necrotising granulomas, with lymphocytes interspersed between the granulomas. There were no micro-organisms on special stains and no evidence of malignancy.
The findings were consistent with sarcoidosis. As this patient had BHL only, he did not require steroid treatment, and has remained well.

OL-041 Apoptosis of CD8+ T-cells in HIV-1-infected typical progressors, but not in long-term non-progressors

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CD4+CD25+ Regulatory T-cells (Tregs) have been demonstrated to down-regulate immune activation in HIV-1 infection. However, persistent HIV infection results in a decrease of Treg absolute counts. Whether the decreased Treg also play an important role in the regulation of excessive activation and apoptosis of CD8+ T-cells in HIV-1-infected patients remains undefined. To address this issue in the cross-sectional study, we characterized Treg among 83 HIV-1 infected individuals, including 19 long-term non-progressors (LTNPs), 51 typical progerssors (TPs) who were treatment naive, and 13 HAART treated AIDS patients, 9 of whom produced complete responses (CRs) to antiviral therapy and 4 of whom were non-responders (NRs) to the treatment. TP but not LTNP patients had significantly decreased absolute counts of circulating Tregs, which inversely correlated with up-regulated activation of CD8+ T-cells. Isolated Treg could significantly inhibit the spontaneous and anti-CD3-induced apoptosis of total and peptide-stimulated HIV-specific CD8+ T-cells in vitro. More importantly, CR patients to antiviral treatment exhibited an increase in circulating total CD4+ T-cells and Treg counts that were associated with reduced activation and apoptosis of CD8+ T-cells compared with NR patients. Thus, our findings indicate that decreases in Treg correlate with disease progression, and increases in Treg in CR patients efficiently blocked excessive activation and apoptosis of CD8+ T-cells.

OL-042 Specific T-cell responses to CFP-10 antigens of *Mycobacterium tuberculosis* in Chinese HIV positive individuals

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Tuberculosis (TB) is still a major public health problem around world, especially in China, which is the second largest TB patient population in the world. AIDS epidemic have make TB infection more complex than that before, it is especially very difficult to make a diagnosis when an AIDS patient combined with extra-pulmonary TB diseases. Traditional methods for diagnosis of TB infection such as TSTs are not sufficient for confirmation of TB infection in AIDS patients.Here, we use use the recombinant CFP-10 protein as stimulus to detect TB specific T-cell responses in Chinese HIV (+) patients.
Methods: CFP-10 was cloned into prokaryotic expression vector pET-32a (+) and transfected into *E. coli* BL21(DE3) to produce the recombinant CFP-10 protein, and use CFP-10 protein as stimulus to detect specific T-cell responses in HIV(+) persons with or without clinical manifestation of TB diseases.

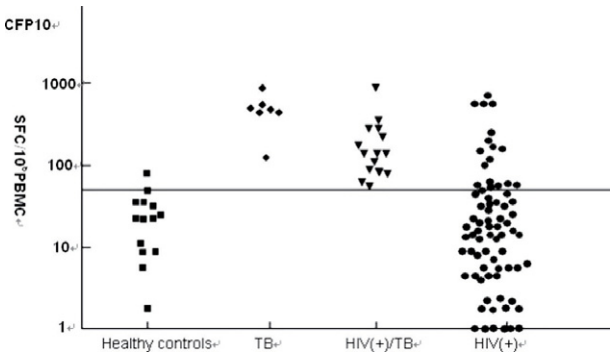

Fig. 1. The result of the IFN-γ responses detected in ELISpot assays: Numbers of antigen-specific T cells in the 4 groups: Healthy controls, TB patients (TB) and HIV infected patients with TB diseases (HIV(+)/TB), and HIV positive without clinical TB diseases (HIV(+)), measured by ELISpot IFN-γ assay after stimulation with CFP-10. A logarithmic scale is used and horizontal bars indicate positive values.

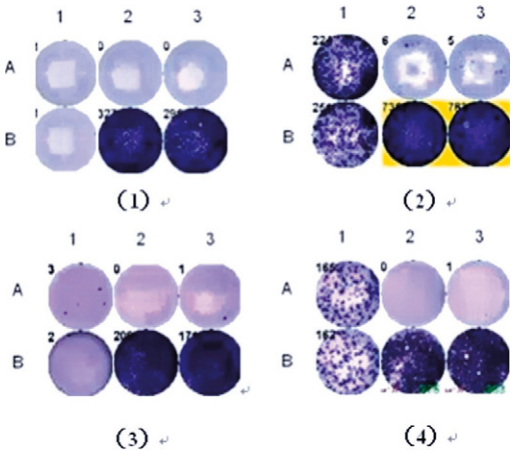

Fig. 2. The results of colored spots counted by an automated ELISpot reader: (1) Healthy controls, (2) TB patients (TB), (3) HIV positive without clinical TB diseases (HIV(+)), (4) HIV infected patients with TB diseases (HIV(+)/TB). A1,B1 consisted of cells cultured with fusion protein